Advanced Renewable Energy for Commercial Facilities Training Course



23 - 27 Nov 2026

Tokyo

5800 € (Per Person)

Ref: #SUS3672_142700

Course Introduction / Overview:

The global shift towards sustainability is compelling commercial enterprises to rethink their energy strategies, moving from passive consumers to active participants in the energy transition. This course provides a comprehensive roadmap for integrating renewable energy systems into commercial facilities, transforming them into efficient, resilient, and environmentally responsible assets. We delve into the practicalities of deploying technologies such as solar photovoltaics, battery energy storage, and EV charging infrastructure. The curriculum is designed to bridge the gap between theoretical knowledge and real-world application, drawing on principles outlined by experts like Dr. Soteris Kalogirou in his seminal work, "Solar Energy Engineering: Processes and Systems". Participants will explore not just the technical aspects of system design and grid interaction, but also the critical financial models, regulatory landscapes, and project management strategies that underpin successful renewable energy projects. At BIG BEN Training Center, we empower professionals to lead their organizations' decarbonization efforts, reduce operational costs, and enhance their corporate ESG profiles through strategic energy management. This training is an essential investment for any organization aiming to achieve energy independence and contribute to a sustainable future.

Target Audience / This training course is suitable for:

- Facility Managers.
- Building Engineers.
- Corporate Sustainability Officers.
- Energy Managers and Consultants.
- Commercial Real Estate Developers and Managers.
- Project Managers in construction and engineering.
- Financial Analysts specializing in energy projects.
- Operations Directors and Managers.
- Procurement and Sourcing Professionals.
- Architects and Building Designers.

Target Sectors and Industries:

- Commercial Real Estate and Property Management.
- Retail and Shopping Centers.
- Hospitality, including hotels and resorts.
- Healthcare Facilities and Hospitals.
- Manufacturing and Industrial Plants.
- Educational Institutions, including universities and schools.
- Data Centers and Technology Hubs.
- Logistics and Warehousing.
- Government Agencies and Public Sector Facilities.

Target Organizations Departments:

- Facilities Management and Operations.
- Sustainability and Corporate Social Responsibility (CSR/ESG).
- Engineering and Technical Services.
- Finance and Investment.
- Strategic Planning and Development.
- Procurement and Supply Chain Management.
- Real Estate and Asset Management.
- Legal and Regulatory Compliance.

Course Offerings:

By the end of this course, the participants will have able to:

- Analyze the energy consumption profile of a commercial facility to identify renewable integration opportunities.
- Conduct a comprehensive feasibility study for solar, wind, and energy storage projects.
- Evaluate different renewable energy technologies and select the most appropriate solutions.
- Understand the technical requirements for grid connection and microgrid development.
- Develop a robust financial model to assess the ROI and payback period of energy projects.
- Navigate power purchase agreements (PPAs), leasing options, and ownership models.
- Manage the procurement, installation, and commissioning phases of a renewable energy project.
- Integrate EV charging infrastructure into a facility's overall energy strategy.
- Ensure compliance with local, national, and international energy regulations and incentives.
- Formulate a long-term strategy for achieving net-zero energy consumption in commercial buildings.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, practical, and highly interactive, ensuring participants can directly apply their learning to their professional roles. We move beyond traditional lectures to foster a dynamic learning environment built on real-world application. The course heavily features case study analysis of successful commercial renewable energy integrations, allowing participants to dissect the strategies, challenges, and outcomes of actual projects. Interactive workshops and group exercises will challenge participants to design hypothetical energy systems, calculate financial viability, and develop project plans for different commercial scenarios. Expert-led sessions will facilitate deep-dive discussions on complex topics like grid-interactive buildings and battery energy storage systems (BESS). Participants will engage in collaborative problem-solving activities, receive personalized feedback, and build a network of peers. This hands-on approach guarantees that attendees leave not just with theoretical knowledge, but with the confidence and practical skills needed to lead and execute renewable energy initiatives within their organizations.

Course Agenda (Course Units):

Unit One Foundations of Commercial Renewable Energy

- Introduction to renewable energy sources for commercial applications.
- Conducting comprehensive commercial energy audits and assessments.
- Analyzing utility bills and identifying energy consumption patterns.
- The role of renewable energy in achieving corporate ESG goals.
- Overview of the regulatory landscape, policies, and incentives.
- Fundamentals of electricity and grid infrastructure.
- Defining project scope and objectives for energy transition.

Unit Two Solar Photovoltaic (PV) System Design and Integration

- Fundamentals of solar PV technology and components.
- Conducting site assessments for commercial solar installations.
- System sizing, configuration, and performance modeling.
- Exploring rooftop, ground-mount, and carport solar solutions.
- Building-Integrated Photovoltaics (BIPV) for modern architecture.
- Inverter technologies and grid connection standards.
- Safety protocols and best practices for PV system installation.

Unit Three Energy Storage, Microgrids, and EV Charging

- Introduction to Battery Energy Storage Systems (BESS).
- Applications of energy storage: peak shaving and load shifting.
- Designing and implementing commercial microgrids for resilience.
- Integrating Electric Vehicle (EV) charging infrastructure.
- Smart grid technologies and demand response programs.
- Ensuring power quality and grid stability with integrated systems.
- The economics of energy storage and EV charging solutions.

Unit Four Financial Modeling and Project Management

- Financial metrics for renewable energy projects: ROI, LCOE, and NPV.
- Exploring financing models: ownership, leasing, and Power Purchase Agreements (PPAs).
- Securing grants, tax credits, and other financial incentives.
- Developing a comprehensive project budget and financial forecast.
- Procurement strategies for renewable energy equipment and services.
- Project lifecycle management from conception to commissioning.
- Risk assessment and mitigation strategies for energy projects.

Unit Five Operations, Maintenance, and Future Trends

- Developing an operations and maintenance (O&M) plan.
- Performance monitoring and optimization of energy systems.
- Using advanced Energy Management Systems (EMS).
- Strategies for achieving net-zero energy commercial buildings.
- The future of Distributed Energy Resources (DERs) and virtual power plants.
- Innovations in renewable energy and smart building technology.
- Capstone project: Developing an integration plan for a case-study facility.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As distributed energy resources become more prevalent, how might the traditional relationship between commercial facilities and utility grids evolve to create a more resilient and decentralized energy ecosystem?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a holistic, business-centric perspective on renewable energy integration, moving beyond purely technical instruction. While other programs may focus narrowly on system installation, our curriculum is strategically designed to equip leaders with the multifaceted skills required to drive an organization's entire energy transition. We place significant emphasis on the financial, regulatory, and strategic dimensions of renewable projects, teaching participants not only how to size a solar array but how to structure a Power Purchase Agreement (PPA), calculate long-term ROI, and align energy initiatives with broader corporate ESG objectives. The methodology is rooted in practical application, utilizing in-depth case studies of real-world commercial facilities to analyze successes and failures. Participants learn to think like a Chief Sustainability Officer or an Asset Manager, balancing technical feasibility with financial viability and operational resilience. The course fosters a strategic mindset, preparing attendees to champion, manage, and execute complex energy projects that deliver tangible value to their organization's bottom line and its sustainability commitments.